IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:	Canis *et al.*	**Conf. No.:**	7110
Serial No.:	09/816,624	**Art Unit:**	2143
Filing Date:	03/23/2001	**Examiner:**	Neurauter, George C.
Title:	SYSTEM AND METHOD FOR MAPPING A NETWORK	**Docket No.:**	END9-2000-0145US1 (IBME-0007)

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

BRIEF OF APPELLANTS

This is an appeal from the Final Rejection dated January 12, 2006, rejecting claims 1-28.

This Brief is accompanied by the requisite fee set forth in 37 C.F.R. 1.17 (c).

REAL PARTY IN INTEREST

International Business Machines Corporation is the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

As filed, this case included claims 1-28. Claims 1-28 remain pending. Claims 1-28 stand rejected and form the basis of this appeal.

STATUS OF AMENDMENTS

A Request for Reconsideration was submitted in response to the After Final Rejection filed by the Office on January 12, 2006; however it contained no amendment to the claims. A Pre-Appeal Brief Request for Conference was submitted simultaneously with the Notice of Appeal. Appellants have not received an Official Response to this request but have received an oral indication that a recommendation to proceed to the Board of Patent Appeals was entered by the Office.

SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention provides a system and method for mapping a network. Specifically, the present invention provides a non-intrusive system and method for identifying network attached devices as well as the details thereof. Under the present invention, a collection apparatus having collection tools is communicated with the network. The collection tools are operated to collect information from the devices. The device information is then analyzed to identify details of the devices. Once identified, the details are aggregated into a report.

Claim 1 claims a system for mapping a network, comprising: a collection system for collecting device identification and detail information from devices on the network (see e.g., page 11, line 10 through page 12, line 5; Fig. 2, item 40) by communicating with each device to retrieve the device identification and detail information (see e.g., page 12, line 6 through page

13, line 6; Fig. 2, items 26, 30, 40), wherein the detail information includes device characteristic information and software information (see e.g., page 2, lines 18-20; page 1, lines 15-21; page 12, line 6 through page 13, line 6; Fig. 2 item 26); a timer system for collecting the device identification and detail information at predetermined scheduled times (see e.g., page 13, lines 7-18; Fig. 2, item 44); an analysis system for analyzing the collected device identification and detail information (see e.g., page 13, line 19 through page 14, line 10; Fig. 2, item 46); and a report system for generating a mapping report based on the analyzed device identification and detail information (see e.g., page 14, lines 11-21; Fig.2, item 50).

Claim 7 claims a system for mapping a network, comprising: a collection system that comprises collection tools for collecting device identification and detail information from devices on the network (see e.g., page 11, line 10 through page 12, line 5; Fig. 2, item 40) by communicating with each device to retrieve the device identification and detail information (see e.g., page 12, line 6 through page 13, line 6; Fig. 2, items 26, 30, 40), wherein the detail information includes device characteristic information and software information (see e.g., page 2, lines 18-20; page 1, lines 15-21; page 12, line 6 through page 13, line 6; Fig. 2 item 26); a timer system for collecting the device identification and detail information at predetermined scheduled times (see e.g., page 13, lines 7-18; Fig. 2, item 44); an analysis system for analyzing the device identification and detail information (see e.g., page 13, line 19 through page 14, line 10; Fig. 2, item 46), wherein the analysis system includes rules for resolving any conflicts between device identification and detail information collected by the collection tools (see e.g., page 14, lines 5-10; Fig. 2, item 48); and a report system for generating a mapping report based on the analyzed device identification and detail information (see e.g., page 14, lines 11-21; Fig.2, item 50).

Claim 12 claims a method for mapping a network, comprising the steps of: installing collection tools on a collection apparatus (see e.g., page 11, line 10 through page 12, line 5; page 15, lines 13-14; Fig. 2, item 40; Fig. 3, item 102); communicating with the network using the collection apparatus (see e.g., page 11, line 10 through page 12, line 5; page 15, lines 14-15; Fig. 2, item 40; Fig. 3, item 104); operating the collection tools to collect device identification and detail information from devices on the network by communicating with each device to retrieve the device identification and detail information (see e.g., page 11, line 10 through page 13, line 6; page 15, lines 15-16; Fig. 2, item 40; Fig 3, item 106), wherein the detail information includes device characteristic information and software information (see e.g., page 2, lines 18-20; page 1, lines 15-21; page 12, line 6 through page 13, line 6; Fig. 2 item 26); analyzing the device identification and detail information (see e.g., page 13, line 19 through page 14, line 10; Fig. 2, item 46); and reporting the analyzed device identification and detail information (see e.g., page 14, lines 11-21; Fig.2, item 50).

Claim 17 claims a program product stored on a recordable media for mapping a network, which when executed, comprises: a collection system for collecting device identification and detail information from devices on the network (see e.g., page 11, line 10 through page 12, line 5; Fig. 2, item 40) by communicating with each device to retrieve the device identification and detail information (see e.g., page 12, line 6 through page 13, line 6; Fig. 2, items 26, 30, 40), wherein the detail information includes device characteristic information and software information (see e.g., page 2, lines 18-20; page 1, lines 15-21; page 12, line 6 through page 13, line 6; Fig. 2 item 26); a timer system for collecting the device identification and detail information at predetermined scheduled times (see e.g., page 13, lines 7-18; Fig. 2, item 44); an analysis system for analyzing the collected device identification and detail information (see e.g.,

page 13, line 19 through page 14, line 10; Fig. 2, item 46); and a report system for generating a mapping report based on the analyzed device identification and detail information (see e.g., page 14, lines 11-21; Fig.2, item 50).

Claim 23 claims a computer system for mapping a network, comprising: a processor (see e.g., page 8, lines 5-15; Fig. 1, item 16); a computer system memory (see e.g., page 8, lines 5-15; Fig. 1, item 12); an interface (see e.g., page 8, line 16, through page 9, line 2; Fig. 1, item 14); and a software product stored on the computer system memory and executable by the processor (see e.g., page 9, lines 3-12; Fig. 1, item 22), wherein the software product comprises: a collection system for collecting device identification and detail information from devices on the network (see e.g., page 11, line 10 through page 12, line 5; Fig. 2, item 40) by communicating with each device to retrieve the device identification and detail information (see e.g., page 12, line 6 through page 13, line 6; Fig. 2, items 26, 30, 40), wherein the detail information includes device characteristic information and software information (see e.g., page 2, lines 18-20; page 1, lines 15-21; page 12, line 6 through page 13, line 6; Fig. 2 item 26); a timer system for collecting the device identification and detail information at predetermined scheduled times (see e.g., page 13, lines 7-18; Fig. 2, item 44); an analysis system for analyzing the collected device identification and detail information (see e.g., page 13, line 19 through page 14, line 10; Fig. 2, item 46); and a report system for generating a mapping report based on the analyzed device identification and detail information (see e.g., page 14, lines 11-21; Fig.2, item 50).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-28 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.
2. Claims 1-3, 6-7, 10-13, 15-19, 22-25 and 28 stand rejected under 35 U.S.C. §102(b) as being anticipated by Pulsipher *et al.* (U.S. Patent No. 5,948,055), hereafter "Pulsipher."
3. Claims 4-5, 8-9, 14, 20-21 and 26-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Pulsipher in view of Steele *et al*. (U.S. Patent No. 6,282,175), hereafter "Steele."

ARGUMENT

1. REJECTION OF CLAIMS 1-28 UNDER 35 U.S.C. §112, FIRST PARAGRAPH

Appellants respectfully submit that the Office's rejection of claims 1-28 under 35 U.S.C. §112, First Paragraph is defective. Specifically, the Examiner states that the limitations "software information" and "device characteristic information" are not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. However, the specification specifically mentions the two terms in a passage that states "…the proper management and control of IT operations may also require *information* pertaining to *device characteristics* as well as any *software* installed on the devices." Page 2, lines 18-20 emphasis added; see also page 1, lines 15-21; page 12, lines 6-23. To this extent, the software information of the claimed invention corresponds, *inter alia*, to the "information pertaining to…software" in the specification, while the device characteristic information corresponds, *inter alia*, to the "information pertaining to device characteristics. As such, Appellants submit that the

terms objected to by the Office are described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Accordingly, the claimed invention complies with the written description requirement. Accordingly, Appellants respectfully request that the rejection be reversed.

2. REJECTION OF CLAIMS 1-3, 6-7, 10-13, 15-19, 22-25 AND 28 UNDER 35 U.S.C. §102(b)

Appellants respectfully submit that the rejection of claims 1-3,-6-7, 10-13, 15-19, 22-25 and 28 under 35 U.S.C. §102(e) over Pulsipher is defective.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987); see MPEP § 2131, p. 2100-69. Because each and every element of claims 1, 3-5, 11, 12, 15, 17, 19, 21, 23, 25, 26 and 30 is not found in Pulsipher, Appellants respectfully request overrule of the rejection under 35 U.S.C. 102(e).

In the above referenced Final Office Action, the Examiner alleges that Pulsipher teaches collecting device identification and detail information, wherein the detail information includes device characteristic information and software information. The Office equates the collecting of device identification and detail information of the claimed invention with the monitoring of network topology of Pulsipher. Office Action, pages 4 and 5, citing; col. 7, lines 41-57. However, the network topology of Pulsipher is not taught as having both device identification and detail information, wherein the detail information includes device characteristic information (e.g., how much RAM a workstation currently has) and software information (e.g., that

workstation A has Microsoft Word™ and/or the software version). To this extent, Pulsipher does not teach collecting the same type of information as does the claimed invention. Furthermore, Pulsipher could not collect all of the types of information collected by the claimed invention, e.g., the device characteristic information and software information because the communications that Pulsipher monitors to get its information do not contain this type of information.

In contrast, the claimed invention includes "…collecting device identification and detail information…wherein the detail information includes device characteristic information and software information." Claim 1. As such, the detail information of the claimed invention is not merely network topology as in Pulsipher, but instead includes device characteristic information and software information. To this extent, the claimed invention can communicate with a device on the system and retrieve information stating that the device is, for example, a Pentium™ 4 machine with 256 MB of RAM running Microsoft Windows 98 SE™ and having Microsoft Word 2000™ installed. Pulsipher does not teach that this type of information is included in its network topology. Thus, the collection of device identification and detail information as included in the claimed invention is not taught by the discovery of topology data in Pulsipher.

In the above referenced Final Office Action, the Examiner further alleges that Pulsipher teaches collecting the device identification and detail information at predetermined scheduled times. The passages of Pulsipher cited by the Office teach,

> …determining a various sets of topology data with a corresponding set of management and/or collection stations by discovering the devices and interconnections situated at predetermined respective areas of the network... Col. 3, lines 36-39; and
>
> When network topology changes on the network, the network monitor generates events, or traps (SNMP vernacular), which include an object identifier and object change information. The network monitor can also receive events from other devices, such as a router, in the network. Col. 7, lines 44-49.

To this extent, the Pulsipher network monitor is a continuously running monitor that issues events if it detects or is notified of a topology change and not a system that monitors system topology only at predetermined scheduled times. Col. 7, lines 41-57, specifically lines 54-57. Furthermore, the sharing of data to eliminate polling in Pulsipher indicates that the collection stations can share data (presumably that has already been collected) and does not specify that the actual collection of the data is performed at predetermined scheduled times. Still further, it is the areas of the network in which the devices reside that are predetermined and not the scheduled time for collecting information. Col. 3, lines 36-39.

The claimed invention, in contrast, includes "…collecting the device identification and detail information at predetermined scheduled times." Claim 1. As such, in the claimed invention, the device identification and detail information is collected at predetermined scheduled times, not continuously monitored as in Pulsipher. Furthermore, the times as included in the claimed invention are not generated as a result of a topology change on the network as are the events in Pulsipher, but rather are at predetermined scheduled times. For example, if it is known that certain persons that connect to the network have laptops that are only connected during the morning while others in the same situation only connect during the afternoon, the claimed invention can be scheduled to collect the information at 10:00 a.m., 2:00 p.m. and 4:00 p.m. Pulsipher does not teach this functionality. For the above reasons, the events of Pulsipher do not teach the collecting of device identification and detail information at predetermined scheduled times as included in the claimed invention.

In the above referenced Final Office Action, the Examiner still further alleges that Pulsipher teaches a collection system for collecting device identification and detail information from devices on the network by communicating with each device to retrieve the device

identification and detail information. The passage of Pulsipher cited by the Office teaches "[t]he network monitor discovers and monitors network topology…the network monitor can also receive events from other devices, such as a router, in the network." Col. 7, lines 42-44, 47-49.

To this extent, Pulsipher does not collect information in the same manner as in the claimed invention. The network monitor of Pulsipher is an in-line monitor that monitors network topology via communications as they are passed through the network. This monitoring may include receiving events from other devices. However, Pulsipher simply receives information as it is passed through the network and does not *retrieve* information from the devices in the network. Specifically, in order to "retrieve" something, some action must occur on the part of the one doing the retrieving. This is in contrast to "monitor" and "receive" of Pulsipher in which the one doing the monitoring and/or receiving passively waits for the desired thing. Thus, the monitoring and receiving of Pulsipher does not teach actively retrieving, such as by pinging, information from a particular device.

Furthermore, the receiving and monitoring of Pulsipher is not triggered by the network monitor's communication with the device. Instead, as stated above, the network monitor of Pulsipher is simply placed in a position to intercept communications between devices in the network. Nowhere does Pulsipher teach that its network monitor retrieves the device identification and detail information from each device in response to a communication with the device.

In contrast, the claimed invention includes "…a collection system for collecting device identification and detail information from devices on the network by communicating with each device to retrieve the device identification and detail information." Claim 1. As such, the collection system of the claimed invention does not simply monitor network topology as does the

network monitor of Pulsipher, but instead collects device identification and detail information from devices on the network by retrieving the device identification and detail information from each device. Furthermore, the collection system of the claimed invention collects the device identification and detail information by communicating with each device. Thus, the collection system as included in the present invention is not taught by the network monitor of Pulsipher.

3. REJECTION OF CLAIMS 4-5, 8-9, 14, 20-21 AND 26-27 UNDER 35 U.S.C. §103(a) OVER PULSIPHER IN VIEW OF STEELE

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Appellants respectfully submit that the Pulsipher and Steele references, taken alone or in combination, fail to meet each of the three basic criteria required to establish a *prima facie* case of obviousness. As such, the rejection under 35 U.S.C. §103(a) is defective.

Appellants initially incorporate the above enumerated arguments. Additionally, in the above referenced Final Office Action, the Examiner alleges that a motivation or suggestion exists for combining or modifying the references. Appellants respectfully submit that the Examiner's rejection is flawed. Specifically, as argued above, Pulsipher teaches monitoring network topology and receiving events. In contrast, the monitored computers of Steele have the information collected from them, not monitored as it is sent elsewhere. Furthermore, the operating system information is not the type of information that is sent in communications such as those monitored by Pulsipher. Accordingly, a combination of Pulsipher and Steele as

proposed by the Office would not function in such a manner as to provide the Pulsipher network monitor with operating system information. Thus, the Office has failed to prove a prima facie case of obviousness.

CONCLUSION

In summary, Appellants submit that claims 1-28 are allowable because Guinta fails to teach each and every feature of the claimed invention and because the cited references, taken alone or in combination, fail to meet each of the three basic criteria required to establish a *prima facie* case of obviousness.

Respectfully submitted,

/ /

Hunter E. Webb
Reg. No.: 54,593

Date: December 12, 2006
Hoffman, Warnick & D'Alessandro LLC
Three E-Comm Square
Albany, New York 12207
(518) 449-0044
(518) 449-0047 (fax)

RAD/hew

CLAIMS APPENDIX

Claim Listing:

1. A system for mapping a network, comprising:
a collection system for collecting device identification and detail information from devices on the network by communicating with each device to retrieve the device identification and detail information, wherein the detail information includes device characteristic information and software information;
a timer system for collecting the device identification and detail information at predetermined scheduled times;
an analysis system for analyzing the collected device identification and detail information; and
a report system for generating a mapping report based on the analyzed device identification and detail information.

2. The system of claim 1, wherein the collection system comprises at least one collection tool for collecting the device identification and detail information.

3. The system of claim 2, wherein the analysis system comprises rules for resolving any conflicts between device identification and detail information collected by the at least one collection tool.

4. The system of claim 1, wherein the device identification and detail information includes device identities, device types, device addresses, device characteristics, operating system and application software installed on the devices, and software characteristics of the devices on the network.

5. The system of claim 4, wherein the generated mapping report includes the device identities, device types, the device addresses, the device characteristics, the operating system and application software installed on the devices, and the software characteristics.

6. The system of claim 1, further comprising a permission system for gaining user access to the network.

7. A system for mapping a network, comprising:
a collection system that comprises collection tools for collecting device identification and detail information from devices on the network by communicating with each device to retrieve the device identification and detail information, wherein the detail information includes device characteristic information and software information;
a timer system for collecting the device identification and detail information at predetermined scheduled times;
an analysis system for analyzing the device identification and detail information, wherein the analysis system includes rules for resolving any conflicts between device identification and detail information collected by the collection tools; and
a report system for generating a mapping report based on the analyzed device identification and detail information.

8. The system of claim 7, wherein the device identification and detail information includes device identities, device types, device addresses, device characteristics, operating system and application software installed on the devices, and software characteristics for the devices on the network.

9. The system of claim 8, wherein the mapping report generated by the report system identifies the device identities, device types, the device addresses, the device characteristics, the operating system and application software installed on the devices, and the software characteristics.

10. The system of claim 9, wherein the report system outputs the generated report.

11. The system of claim 7, further comprising a permission system for gaining user access to the network.

12. A method for mapping a network, comprising the steps of:
installing collection tools on a collection apparatus;
communicating with the network using the collection apparatus;
operating the collection tools to collect device identification and detail information from devices on the network by communicating with each device to retrieve the device identification and detail information, wherein the detail information includes device characteristic information and software information;
analyzing the device identification and detail information; and
reporting the analyzed device identification and detail information.

13. The method of claim 12, wherein the collection apparatus comprises at least one processor.

14. The method of clam 12, wherein the device identification and detail information includes device types, device addresses, device characteristics, operating system and application software installed on the devices, and software characteristics for the devices on the network.

15. The method of claim 12, wherein the analyzing step further comprises the step of resolving any conflicts between device identification and detail information collected by different collection tools.

16. The method of claim 12, wherein the reporting step comprises the step of generating a mapping report based on the analyzed device identification and detail information.

17. A program product stored on a recordable media for mapping a network, which when executed, comprises:
a collection system for collecting device identification and detail information from devices on the network by communicating with each device to retrieve the device identification and detail information, wherein the detail information includes device characteristic information and software information;
a timer system for collecting the device identification and detail information at predetermined scheduled times;

an analysis system for analyzing the collected device identification and detail information; and

a report system for generating a mapping report based on the analyzed device identification and detail information.

18. The program product of claim 17, wherein the collection system comprises at least one collection tool for collecting device identification and detail information.

19. The program product of claim 17, wherein the analysis system comprises rules for resolving any conflicts between device identification and detail information collected by the collection tools.

20. The program product of claim 17, wherein the device identification and detail information includes device identities, device types, device addresses, device characteristics, operating system and application software installed on the devices, and software characteristics of the devices on the network.

21. The program product of claim 20, wherein the generated mapping report identifies the device identities, device types, the device addresses, the device characteristics, the operating system and application software installed on the devices, and the software characteristics.

22. The program product of claim 17, further comprising a permission system for gaining user access to the network and the devices.

23. A computer system for mapping a network, comprising:

a processor;

a computer system memory;

an interface; and

a software product stored on the computer system memory and executable by the processor, wherein the software product comprises:

a collection system for collecting device identification and detail information from devices on the network by communicating with each device to retrieve the device identification and detail information, wherein the detail information includes device characteristic information and software information;

a timer system for collecting the device identification and detail information at predetermined scheduled times;

an analysis system for analyzing the collected device identification and detail information; and

a report system for generating a mapping report based on the analyzed device identification and detail information.

24. The computer system of claim 23, wherein the collection system comprises at least one collection tool for collecting device identification and detail information.

25. The computer system of claim 23, wherein the analysis system comprises rules for resolving any conflicts between device identification and detail information collected by the collection tools.

26. The computer system of claim 23, wherein the device identification and detail information includes device identities, device types, device addresses, device characteristics, operating system and application software installed on the devices, and software characteristics of the devices on the network.

27. The computer system of claim 26, wherein the generated mapping report identifies the device identities, device types, the device addresses, the device characteristics, the operating system and application software installed on the devices, and the software characteristics.

28. The computer system of claim 23, further comprising a permission system for gaining user access to the network.

EVIDENCE APPENDIX

No evidence is entered and relied upon in the appeal.

RELATED PROCEEDINGS APPENDIX

No decisions rendered by a court or the Board in any proceeding are identified in the related appeals and interferences section.